# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/722,038 | 11/24/2003 | Jeff Peck | 1020.P16469 | 6494 |

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| EXAMINER |
|---|
| SHAH, PARAS D |

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| 2609 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

<table>
<tr><td rowspan="2">Office Action Summary</td><td colspan="2"><b>Application No.</b><br>·10/722,038</td><td colspan="2"><b>Applicant(s)</b><br>PECK, JEFF</td></tr>
<tr><td><b>Examiner</b><br>Paras Shah</td><td colspan="2"><b>Art Unit</b><br>2609</td><td></td></tr>
</table>

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>24 November 2003</u>.

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

## DETAILED ACTION

1.      This communication is in response to the Application filed on 11/24/2003.

### *Specification*

2.      Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The provided abstract does not provide a concise statement of the technical

disclosure of the patent rather the abstract points to the method and apparatus

described. The abstract should be within 50 to 150 words see MPEP 608.01 (b)[R-3].

### Claim Objections

3.      Claim 3 is objected to because of the following informalities:  Claim 3 refers to

the pre-buffer, which is mentioned in claim 2. It is suggested that the claim be

dependent upon claim 2 rather than claim 1.  Appropriate correction is required.


### Claim Rejections - 35 USC § 102

4.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

5.      Claims 1, 4-9, 13, 14, 17-20 are rejected under 35 U.S.C. 102(e) as being

anticipated by Tackin (US 7,180,892).

As to claims 1 and 14, Tackin discloses a method, comprising: receiving a

plurality of packets (see col. 13, lines 1-3) with audio information (see Abstract) (e.g.

Applicant defines audio information to include voice and silence (see page 4, [0006],

lines 3-5); determining whether said audio information represents voice information (see

col. 12 lines 4-9) (e.g. The determination of the audio information is found by the voice

activity detector); and buffering said audio information in a jitter buffer (see Figure 6,

elements 86 and 90 and col. 13, lines 66-67-col. 14. lines 1-3 and figure 25, element

510) after said determination (see col. 13, lines 18-27). The reference also discloses a
computer readable storage medium for the above limitations (see col. 2, lines 45-51).

As to claims 4 and 17, Tackin discloses wherein said determining comprises:
receiving frames of audio information at a voice activity detector (see col. 12, lines 4-5)
(e.g. It is shown by the reference that audio information (voice) us received by the voice
activity detector); measuring at least one characteristic (see col. 25, lines 39-44) of said
frames (see col. 2, line 10 ((e.g. It is shown that frames are used as the timing input of
the signal containing information); determining a start of voice information based on said
measurements (see col. 25, lines 39-44); and determining an end to said voice
information based on said measurements  (see col. 25, lines 39-44) (e.g. It is inherent
that a voice activity detector will detect the start and end of speech as it detects periods
of speech and non-speech) and a delay interval (see col. 13, lines 19-21 and col. 14,
lines 1-6) (e.g. The jitter buffer adds a delay for packets that are not arriving on time.
The applicant regards the delay time being calculated from the jitter buffer (see
Applicant's Specification, page  17, [0038], lines 1-6.)

As to claim 5, Tackin discloses wherein said characteristic comprises an estimate
of an energy level for said frame (see col. 25, lines 29-38).

As to claims 6 and 18, Tackin discloses further comprising adjusting said delay
interval to correspond to an average packet delay time (see col. 35, lines 22-25, lines
26-44, and lines 23-31 ) (e.g. The applicant refers to the average packet delay time as
predetermined or is dynamically changing from network conditions (see Applicant's
Specification, page 17, [0038],  lines 2-6). The reference denotes a target holding time

similar to the average packet delay time, which is either updated from preset values or updated adaptively.)

As to claims 7 and 19, Tackin further comprising: measuring an average packet delay time by said jitter buffer (see col. 35, lines 26-44) (e.g. The average packet delay time is first estimated, but then adjusted due to the actual values (measurement) for subsequent packets); and sending said average packet delay time to said voice activity detector (see Figure 6, elements 90 and 98) (e.g. It is evident from the diagram that from the voice synchronizer it proceeds down to the voice decoder and lost frame recovery engine, which then proceeds to the voice activity detector.)

As to claims 8 and 20, Tackin discloses wherein said receiving comprises: retrieving a frame of audio information from said packets (see col. 13, lines 1-3); receiving an echo cancellation reference signal (see Figure 6, output of element 108 to input if element 70 and col. 10 lines 66-67-col. 11, lines 2-4) (e.g. It is evident for the echo canceller a reference signal is needed that is free from echo to compare with the incoming signal); canceling echo from said frame of audio information (col. 10 lines 66-67-col. 11, lines 1-5) (e.g. The input signal contains voice and noise information); and sending said frame of audio information to a voice activity detector (see Figure 6, output of element 70 to input to element 72 to input of element 80).

As to claim 9, Tackin discloses a system comprising: a voice activity detector to detect voice information in said frame (see col. 12, lines 4-5); and a jitter buffer to buffer said information after said detection by said voice activity detector buffer (see Figure 6, elements 86 and 90 and col. 13, lines 66-67-col. 14, lines 1-3 and figure 25, element

510). Further, Tackin discloses the use of digital phones (see col. 6, lines 13-14) (e.g. It

is inherent that digital phones consist of built-in antenna as well as a receiver for

hearing audio information and transmitter for transmitting information.

As to claim 13, Tackin discloses where said voice activity detector further

comprises: and estimator to estimate energy level values (see col. 25, lines 29-36); a

voice classification module connected to said estimator to classify information for said

frame (see col. 25, lines 29-36) (e.g. It is evident by the reference that once the energy

level is found classification occurs.)


### Claim Rejections - 35 USC § 103

6.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.      Claims 2, 3, 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tackin as applied to claims 1, 9, and 14 above,  in view of Clemm

(US 6,865,162).

As to claims 2 and 15, Tackin does not specifically disclose the buffering of a

portion of said audio information in a pre-buffer for a predetermined time interval.

Clemm does disclose the use of a buffer (see col. 2, line 31) for a predetermined time

(see col. 2, lines 31-33) prior to said determining (see Figure 1, elements 110 and 120

and col. 2, lines 30-37). It would have been obvious to one of ordinary skilled in the art

at the time the invention was made to have combined the teachings of Tackin with the

buffer before the voice activity detector presented by Clemm. The motivation to have

combined the two references involve the elimination of clipping associated with voice

activity detector directed during silence suppression (see Clemm col. 2, lines 47-48) as

would have been seen in the teachings of Tackin.

As to claims 3 and 16, Tackin discloses sending said information from the jitter

buffer to an end user (see col. 11, line 3) (e.g. The applicant denotes the endpoint to be

defined as the human user (see Applicant's Specification, page 8, [0018], lines 5-6).

Further, it is implied that the output of the system will be transmitted to the user since

the reference deals with voice exchange). (Further, the sending of audio information to

the user from the pre-buffer would have been apparent with the teaching presented by

Clemm to avoid clipping).

As to claim 12, Clemm discloses further comprising a buffer to store speech

during detection by voice activity detector (see Figure 1, elements 110 and 120 and col.

2, lines 30-37).

8.      Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tackin in view of Sih et al. (US 5,920,834).

As to claim 10, Tackin does not specifically disclose the echo canceller

connected to a receiver to cancel the echo. However, Sih et al. does disclose the echo

canceller being connected to a receiver (see Figure 1, elements 14 and 10) (e.g. It is

evident that a transceiver consists of a receiver and a transmitter). It would have been

obvious to one of ordinary skilled in the art at the time the invention was made to have

the echo canceller connected to a receiver. The motivation to have combined the two references involves cancellation of echo for mobile phones that may occur in speech signals (e.g. see Sih *et al.*, col. 23-25) as would have been apparent in the teachings of Tackin, which describes communication between telephony devices.

As to claim 11, Sih *et al.* discloses further comprising a transmitter (see Figure 1, element 14) (e.g. Transceiver consists of a transmitter) to provide an echo cancellation signal to said echo canceller (see Figure 1, element 10 and col. 6, lines 14-18).

## Conclusion

9.      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kwan (US 6, 504,838), Anandakumar *et al.* (US 6,744,757), and Ubale (US 2003/0212550) are cited to disclose a signal processing system distinguishing between voice and data signals for a packet based network. Marchok *et al.* (US 6,522,746) is cited to disclose the echo cancellation for voice processing. Kramer *et al.* (US 6,658,027) is cited to discloses jitter buffer management. Mikesell *et al.* (US 6,990,194) is cited to disclose a telephone based system having a VAD coupled. Tapadar *et al.* (US 7,027,989) is cited to disclose transmission and processing of data at a mobile station. Guduru (US 2005/0060149) is cited to disclose use if fuzzy logic for voice activity detection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paras Shah whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-FRI. 7:30a.m.-5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571)272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

P.S.

4/24/2007

XIAO WU
SUPERVISORY PATENT EXAMINER